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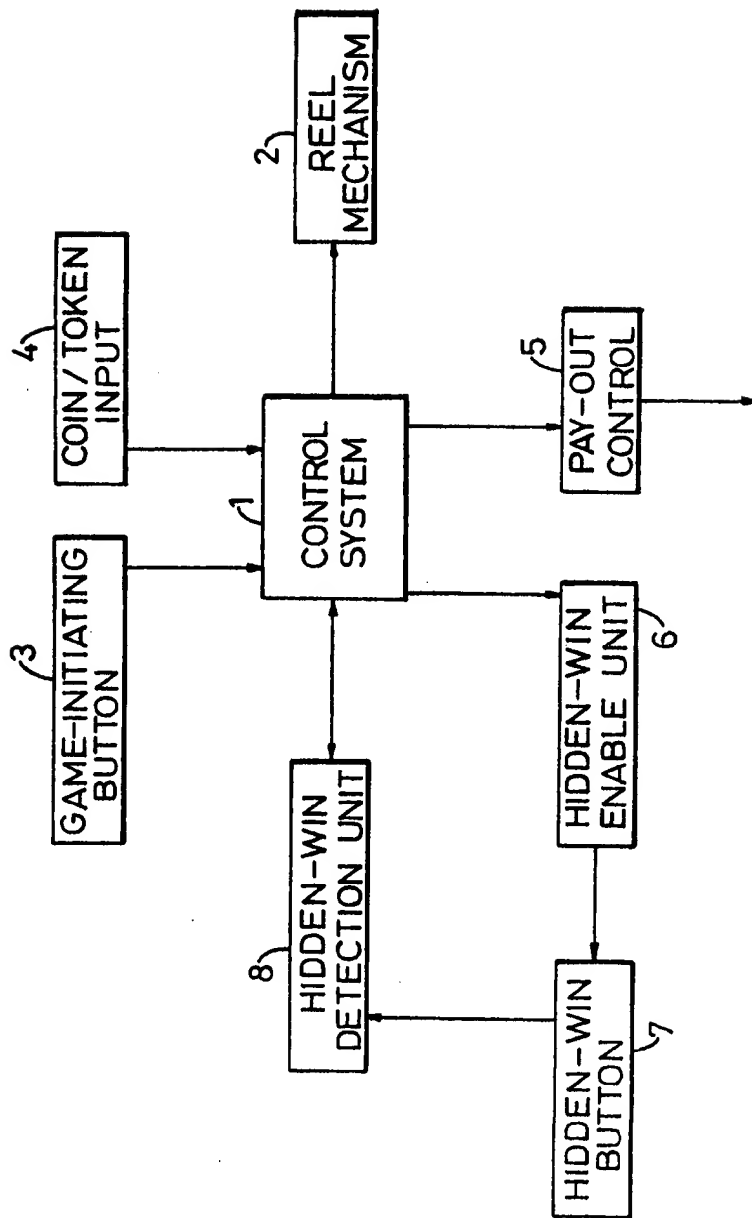
(54) Gaming machines

(57) A fruit machine includes a control system 1 which supplies drive signals to a reel mechanism 2 in response to actuation of a game-initiating button 3 to cause the reels bearing fruit and other symbols to be spun and to come to rest with a combination of symbols in a viewing zone. This combination is compared with a list of winning combinations and a prize is awarded in the event of a match. In dependence on the result of the game or on a random basis, a hidden-win detection unit 8 determines whether there is a combination of symbols on the reels along a line which is not visible, or is only partially visible, in the viewing zone which, if within the viewing zone, would constitute a winning combination. If such a combination exists the player may depress a hidden-win button 7 so as to index the reel mechanism 2 to cause the detected combination to appear within the viewing zone, and a prize is then awarded in the usual manner.

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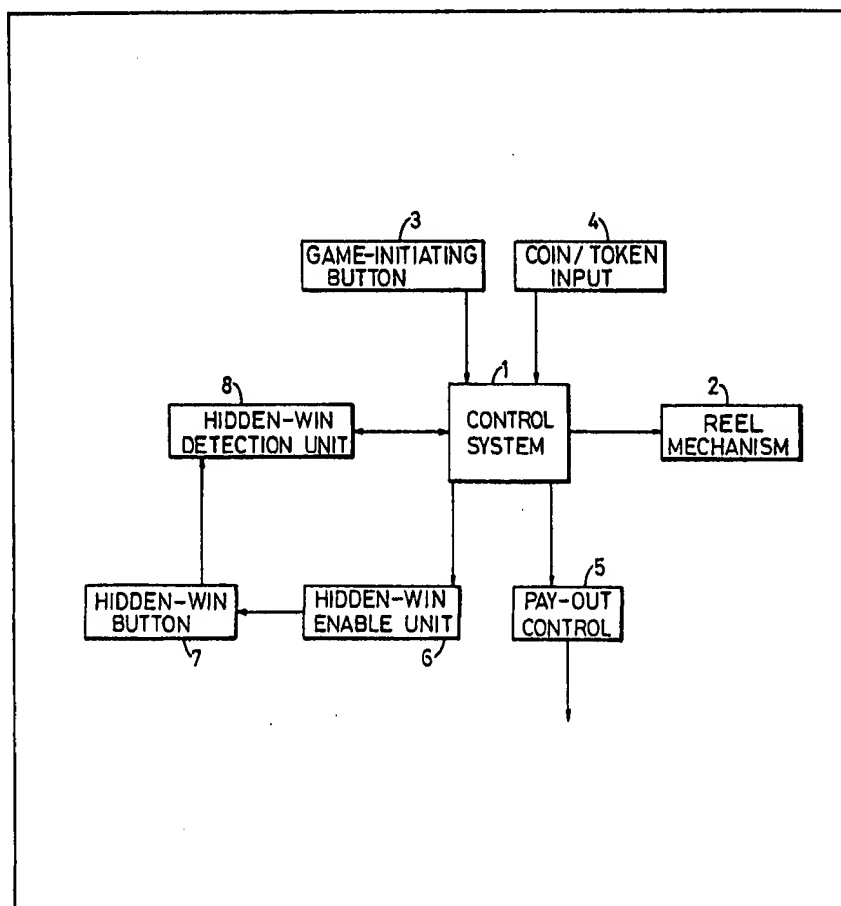
SPECIFICATION

Gaming machines

5   This invention relates to gaming machines, such
as those known as "fruit machines".
       Fruit machines conventionally incorporate three or
more rotary members, such as reels or strips, dis-
posed side-by-side and bearing symbols viewable in
10   a viewing zone, or a representation of such rotary
members, referred to hereafter as "quasi-rotary
members", on a video or projection screen. The
symbols generally represent various fruits, although
it will be understood that the term "fruit machine"
15   may be applied to machines having rotary members
bearing symbols other than fruits. During a game the
rotary members are spun or appear to be spun in
response to actuation of a game-initiating button by
a player after a coin, token or credit has been paid
20   into the machine, and the rotary members subse-
quently come to rest in random positions indicated
by a combination of symbols in the viewing zone.
Alternatively the machine may comprise display
units, such as an array of lightsn adapted to display
25   the symbols, the means for cyclically changing the
symbols displayed by the units. The combination of
symbols visible in the viewing zone is then com-
pared with a number of prize-winning combinations,
and a prize is awarded if a match is found. In addition
30   to the normal game a number of game features,
such as "hold" and "nudge", may be made available
to the player by such machines in order to increase
the chances of obtaining a prize.
       It is an object of the invention to provide such a
35   machine with an entirely novel game feature which
will improve the player appeal of the machine.
       According to the invention there is provided a
gaming machine comprising a plurality of rotary or
quasi-rotary members bearing symbols, or a plural-
40   ity of display units adapted to display symbols and
capable of being cycled in a predetermined sequ-
ence to change the symbols displayed, a game-
initiating switch which when actuated by a player,
causes the rotary members to be spun, or the display
45   units to be cycled, and to come to rest with a combi-
nation of symbols in a viewing zone, win processing
means for determining whether the resulting com-
bination of symbols in the viewing zone is one of a
plurality of possible winning combinations,
50   hidden-win detecting means for determining
whether, if each of the rotary members or display
units were indexed by the same amount starting
from the positions assumed by the rotary members
or display units after being spun or cycled, a winning
55   combination would appear within the viewing zone
which was not visible, or was only partially visible, in
the viewing zone in said starting positions of the rot-
ary members or display units, and hidden-win
actuating means for indexing the rotary members or
60   display units to bring this winning combination
within the viewing zone where such a combination is
found to exist.

This feature could be available at all times or
become available intermittently either randomly or
65   according to a predetermined set of criteria, for
example in response to a particular combination of
symbols appearing in the viewing zone as a result of
the main game. This particular combination of sym-
bols may itself be a winning combination, and the
70   player may be given the option of accepting the win
corresponding to this combination or gambling for a
win of higher value.
       When the feature is awarded, the rotary members
are preferably moved by actuating either the game-
75   initiating switch for a second time or a special sub-
sidiary control, to cause the rotary members to move
all together or one at a time, all in the same direction
or in different directions, into their final positions.
The rotary members may be movable into these final
80   positions by "nudging" them one symbol at a time
with an appropriate button or by operating a "skill"
button of the type described in Specification No.
2,083,934A.
       In order that the invention may be more fully
85   understood, a fruit machine in accordance with the
invention will now be described, by way of example,
with reference to the accompanying drawing, in
which the single figure shows a block diagram of the
machine.
90   The illustrated machine includes a control system
1 which incorporates a microprocessor and is of the
type described in Patent Specification No. 1,550,732.
This control system 1 controls a reel mechanism 2
comprising four reels in dependence on depression
95   of a game-initiating button 3 and various game-
feature buttons by the player. When a coin or token
is introduced into a coin/token input 4 of the machine
and the game-initiating button 3 is depressed by the
player, the reels of the reel mechanism 2 are caused
100 to be spun by the control system 1 with the reels
coming to rest one at a time and in a particular order
in accordance with the usual convention. Each reel is
driven by the appropriate amount by a respective
drive signal supplied by the control system 1, and
105 the combination of symbols on the combination line
when the reels have stopped is computed directly
from the drive signals and compared with the poss-
ible prize-winning combinations. In the event of a
match a prize is awarded by a pay-out control 5.
110   The combination of symbols on the combination
line when the reels have stooped is also compared
with a number of possible feature combinations,
and, if a match is found, a hidden-win feature is
made available to the player by a hidden-win enable
115 unit 6, the availability of this feature being indicated
to the player by a flashing light. A hidden-win detec-
tion unit 8 then determines whether there is a com-
bination of symbols on the reels along a line which is
not visible, or is only partially visible, in the viewing
120 zone which, if within the viewing zone, would consti-
tute a winning combination. If such a combination
exists the player may depress a hiddin-win button 7
and the hidden-win detection unit 8 then causes the
control system 1 to index the reel mechanism 2 so

The drawing originally filed was informal and the print here reproduced is taken
from a later filed formal copy

that all the reels roll around together until they come to rest with the winning combination along the combination line in the viewing zone. A prize is then awarded by the pay-out control 5 in the usual manner.

In a modification of the above-described machine the hidden-win feature is made available to the player if the combination of symbols on the combination line corresponds to one of the possible winning combinations instead of the player being awarded a prize, so as to enable the player to gamble for a higher value win. In this case the decision as to whether a prize is to be awarded or the hidden-win feature is to be made available when a particular winning combination is obtained will generally be determined on a random basis with a particular chance of the feature being awarded. In a further modification of the illustrated machine the hidden-win feature is made available to the player on a random basis with a particular chance of the feature being awarded.

Furthermore the means by which the reels are indexed so as to display the winning combination in the viewing zone where such a combination is detected by the hidden-win detection unit 8 may also be varied. The hidden-win button 7 may be the same as the game-initiating button 3. Alternatively a respective hidden-win button 7 may be provided for indexing each of the reels. In either case the hidden-win button or buttons may be arranged to index the reels by one symbol each time the buttons are depressed so that the reels must be moved into their final positions by "nudging" them one symbol at a time. Alternatively the or each button may be replaced by an actuating member, called a "skill" button, which is movable on actuation by the player between an inoperative state and an operative state, and a control circuit for sensing the speed and/or distance and/or force with which the actuating member is moved by the player between its inoperative and operative states and for supplying a control signal dependent on the sensed speed and/or distance and/or force for bringing a winning combination within the viewing zone in response to detection of such a combination by the hidden-win detection unit 8.

A similar hidden-win feature may be provided in a machine in which the reels are replaced by display units each of which is capable of being cycled to display symbols in a predetermined sequence, although, in this case, the combination of symbols which is to be detected by the hidden-win detection unit is a combination which, if all the display units were indexed by the same amount, would appear as a winning combination within the viewing zone.

CLAIMS

1. A gaming machine comprising a plurality of rotary or quasi-rotary members bearing symbols, or a plurality of display units adapted to display symbols and capable of being cycled in a predetermined sequence to change the symbols displayed, a game-initiating switch which, when actuated by a player, causes the rotary members to be spun, or the display units to be cycled, and to come to rest with a combination of symbols in a viewing zone, win processing means for determining whether the resulting combination of symbols in the viewing zone is one of a plurality of possible winning combinations, hidden-win detecting means for determining whether, if each of the rotary members or display units were indexed by the same amount starting from the positions assumed by the rotary members or display units after being spun or cycled, a winning combination would appear within the viewing zone which was not visible, or was only partially visible, in the viewing zone in said starting positions of the rotary members or display units, and hidden-win actuating means for indexing the rotary members or display units to bring this winning combination within the viewing zone where such a combination is found to exist.

2. A gaming machine according to claim 1, wherein the hidden-win actuating means comprises an actuating member which is movable on actuation by the player between an inoperative state and an operative state, and a control circuit for sensing the speed and/or distance and/or force with which the actuating member is moved by the player between its inoperative and operative states and for supplying a control signal dependent on the sensed speed and/or distance and/or force for bringing a winning combination within the viewing zone in response to detection of such a combination by the hidden-win detecting means.

3. A gaming machine according to claim 1, wherein the hidden-win actuating means comprises a switch actuable by the player to bring a winning combination within the viewing zone in response to detection of such a combination by the hidden-win detecting means.

4. A gaming machine according to claim 3, wherein the hidden-win actuating switch is arranged to index the rotary members or display units by one symbol each time that it is actuated.

5. A gaming machine according to claim 3, wherein the hidden-win actuating switch is also the game-initiating switch.

6. A gaming machine according to any preceding claim, wherein hidden-win enabling means is provided for making the hidden-win feature available on a random basis.

7. A gaming machine according to any preceding claim, wherein hidden-win enabling means is provided for making the hidden-win feature available on the basis of a predetermined set of criteria.

8. A gaming machine according to claim 7, wherein the hidden-win enabling means is adapted to make the hidden-win feature available when the combination of symbols in the viewing zone resulting from the spinning or cycling of the rotary members or display units in response to actuation of the game-initiating switch is one of a plurality of possible feature combinations.

9. A gaming machine according to claim 7, wherein the hidden-win enabling means is adapted to make the hidden-win feature available when the combination of symbols in the viewing zone resulting from the spinning or cycling of the rotary members or display units in response to actuation of the game-initiating switch is one of the possible winning

combinations so as to enable the player to gamble for a higher value win.

10. A gaming machine according to any preceding claim, wherein the hidden-win actuating means
5 is adapted to index all the rotary members or display units simultaneously.

11. A gaming machine substantially as hereinbefore described with reference to the accompanying drawing.